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Multi-stakeholder dialogue on sustainable agriculture

Note by the Secretary-General

Addendum

Discussion paper contributed by the non-governmental organizations*

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* The views and opinions expressed in the present discussion paper are those of the non-governmental organizations and do not necessarily represent those of the United Nations.

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NGO Contribution to the Multi-stakeholder Dialogue on Sustainable Agriculture Dialogue*

Section 1: Choices in Agricultural Production Techniques, Consumption Patterns and Safety Regulations: Potentials and Threats to Sustainable Agriculture

Sustainable agriculture, food security and food safety are more urgent goals than ever as we enter the new millennium. In both developed and developing countries the agricultural sector has a variety of roles: to help ensure food security, anchor rural development, provide resources for the livelihood and adequate incomes of a majority of people, and to do this without destroying the ecological base. There are thus three inextricably linked components, social, economic and environmental, to agricultural sustainability. Chapter 14 of Agenda 21, Sustainable Agriculture and Rural Development (SARD), lays the groundwork for this definition and scope.

Issues and Concerns

In contrast with holistic farming systems with their close links between agriculture and ecology, modern production systems in the post-World War II period are reductionist in their approach, favouring large farms, specialised production, crop monocultures and mechanisation, and compromising on ecological principles, and human health. While the former produced modest but stable yields, the latter showed initial high yields, followed by decreasing output per unit of

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* The Sustainable Agriculture/Food Systems (SAFS) Caucus of the NGO Steering Committee to the CSD coordinated the preparation of this paper. SAFS Caucus is co-chaired by the Association of Barbados NGOs and the International Partners for Sustainable Agriculture (IPSA). Numerous NGOs provided inputs for this paper including: Accion Andina, Bolivia; Agriculture Missions, US; Agroecology/Environmental Studies, U. of California; Association for the Promotion of Organic Farming, India; CGIAR NGO Committee: Center for Citizen Initiatives, US-Russia; Centre for Development Studies, University College, Dublin, Ireland; Centre for Environment and Society, University of Essex; CLADES, Latin America; COASAD, Africa; COSTED, India; Consumers Union, US; Dutch NGOs and partners, Netherlands; Farmers' Link, UK; German Environment and Development Forum; GRET, France; Institute for Agriculture and Trade Policy; Institute for Sustainable Development, Poland; Intermediate Technology Development Group, UK; International Federation of Organic Agriculture Movements; International Indian Treaty Council; International Institute for Rural Reconstruction, Philippines; IRED, Zimbabwe; MONLAR, Sri Lanka, Asian NGO Coalition, Philippines; Neosynthesis Institute, Sri Lanka; OXFAM Kenya; Popular Coalition to Eradicate Hunger and Poverty, Italy; REDES - Amigos de la Tierra, Uruguay; Royal Society for the Protection of Birds, UK; Rural Food Security, Tanzania; Sobrevivencia, FOE Paraguay; Sustain: The Alliance for Better Food and Farming, UK; The Institute for Food and Development Policy/Food First, US; The Pesticides Trust, UK; The Urban Agriculture Network; Third World Network; UNED-UK SARD Working Group; World Hunger Year; World Resources Institute, US; World Wildlife Fund, UK, Switzerland, Canada; and ZERO Regional Environment Organisation, Zimbabwe.

energy input. The measurement of yield per unit of land has also been biased towards industrial agriculture. In India, for example, figures on rice production in pre-Green Revolution farms were unfavorably compared with the yield of monoculture farms without comparing the total yield of the former in terms of the various rotation crops, other crops grown with rice plants (polyculture) and animal husbandry (Shiva, 1991). A 1999 study released at the Maastricht Conference showed that small farmers worldwide produce from 2 to 10 times more per unit area than do larger, corporate farmers. Small farms are "more productive, more efficient, and contribute more to economic development" with communities surrounded by populous small farms having "healthier economies" than those surrounded by depopulated large, mechanised farms. Small farmers also take better care of natural resources, including reducing soil erosion and conserving biodiversity, thus safeguarding the future sustainability of agricultural production (Rosset, 1999).

Industrial agriculture also saw the replacement of a diversity of closed farming systems, where the cycles of nutrients, energy, water and wastes emulated a natural ecosystem, with more open systems resulting in wasteful use of natural resources and a major problem of agricultural waste. Biodiversity of crops, animals, fish and soil ecosystems, which are essential for sustainable agriculture continues to be threatened by monocultures or near monocultures and intensive use of chemicals. For instance, the documented impact of Persistent Organic Pollutants (POPS) in the form of commercial pesticides and dioxin (an industrial pollutant), both of which contaminate not only the natural irrigation sources of farmland and Indigenous territories worldwide, and on which farmers and Indigenous Peoples depend, but also contaminate the traditional fish and game eaten by many as an essential protein base. While no longer used in some countries, they are extensively used in the developing world, where they degrade with difficulty, inflicting long term damage to ecosystems and many agricultural lands and Indigenous territories.

No longer is it denied that industrial agriculture continues to face an ecological crisis. There are two categories of "ecological diseases" associated with capital-, energy- and chemical-intensive agriculture: a) problems directly associated with the basic resources of soil and water, including soil erosion, loss of inherent soil productivity and depletion of nutrient reserves, salinisation and alkalinisation (especially in arid and semi-arid regions), pollution of surface and groundwater, and loss of croplands to urban development; b) problems directly related to crops, animals and pests, including loss of crop, wild plant and animal genetic resources, elimination of natural

enemies of pests, pest resurgence and genetic resistance to pesticides, chemical contamination, and destruction of natural control mechanisms.

Industrial agriculture, coupled with the impetus of international trade and consumption patterns that strain the planet's natural resources, has also destabilised the social and cultural fabric of farming communities. The impact has been even more dramatic for Southern societies, particularly for indigenous peoples. In many societies, women who had critical roles in farm decision-making and the conservation of seeds, found themselves displaced when commercial monocultures were introduced. Moreover, women and children tend to be the main victims of the malnutrition such monocultures have failed to solve, and even contributed to. Thus the problem of agricultural production cannot be regarded only as a technological one; attention to social, cultural, political and economic issues that account for the crisis is crucial.

Unfortunately, even as one chapter of Agenda 21 acknowledged the unsustainability of chemical agriculture and the limits of the Green Revolution, the same corporate interests that championed and benefited from the first "revolution" aggressively promoted the "Gene Revolution" as the panacea. Hence the fulsome promises of the Biotechnology chapter in Agenda 21. The Commission on Sustainable Development in its third session called for a more balanced assessment of the new biotechnologies, in the light of new scientific evidence of hazards.

Solutions and Recommendations: The Way Forward

In this paper, sustainable agriculture refers to organic/ecological agriculture, with its complexity of ecological, social, economic and cultural dimensions. Many are traditional or indigenous systems, especially in the South, that are surviving the onslaught of globalisation of industrial agriculture. There is a significant increase in the North of organic/ecological farming, reaching commercial scales, that build on practices that had been abandoned when monocultures and chemicals took over. A more radical transformation of agriculture is needed, one guided by the notion that ecological change in agriculture cannot be promoted without changing the strategic goals in agriculture and comparable changes in the social, political, cultural, and economic arenas that also constrain agriculture. This approach is consistent with the call in Agenda 21 for a comprehensive assessment of national agricultural policies within the context of a supportive international environment.

Call for Action: Institutional Action and Possible Partnerships

Production Systems

1. The CSD should call for various forms and systems of organic/ecological agricultural production currently in use to be supported and further enhanced. These include traditional and indigenous systems, particularly in the South, and techniques and systems developed in the North in recent years. Governments and multilateral institutions should remove programmes, such as price support, that perpetuate monocultures and instead support, among others, crop rotation and polyculture activities, that form part of ecological approaches with small farmers as a priority target. The CSD is urged to accelerate the implementation of the Agenda 21 and the Programme of Action adopted at the five-year review of Agenda 21. To facilitate this, there should be a call to develop a mechanism for an ongoing multi-stakeholder dialogue through a working group on sustainable agriculture and rural development (SARD) to report back to the CSD on a number of issues, particularly those highlighted in the papers presented at this Dialogue of CSD 8.

2. We look to inter-governmental institutions such as the CSD to take actions which represent the public interest. In particular, the vulnerability of farmers and consumers in developing countries to the hazards posed by genetic engineering and related technologies and their products needs special attention, given the lack of information and biosafety capacity in those countries. Biosafety must be addressed by the United Nations and not the World Trade Organisation (WTO), and the CSD is the most appropriate forum for a continuing broad-based review of new technologies, supplementing and complementing the work of the Convention on Biological Diversity and the Cartagena Protocol on biosafety.

3. Organic/ecological agriculture is now beyond just vision and potential, and is rapidly and increasingly contributing to sustainable agriculture in real terms. It is therefore timely for the CSD to promote the mainstreaming of organic/ecological agriculture amongst governments, bilateral and multilateral agencies. In particular, the FAO Committee on Agriculture (COAG)'s endorsement of "the environmental and potential health benefits of organic agriculture and its contribution of innovative production technologies to other agriculture systems and to the overall goals of sustainability" should be highlighted and further endorsed by CSD.

4. With regard to the existing and even growing use of chemical pesticides, the CSD should:

a) Call for support for the speedy completion of the process which is amending the International Code of Conduct on the Distribution and Use of Pesticides, and support its implementation;

b) Indicate that the maximum residue levels of pesticides being established under Codex Alimentarius for agricultural produce in international trade need to be at levels which ensure maximum safety for consumers. National residue levels should aim for consistency to protect domestic consumers;

c) Acknowledge that pesticides should not be used in developing countries if they are classified by the World Health Organisation (WHO) as 'extremely' and 'highly' hazardous, and also preferably not those classified 'moderately' hazardous;

d) Call for the removal and safe destruction of the stockpiles of obsolete pesticides in developing countries and countries with economies in transition which are threatening health and the environment, and introduce regulation and training to ensure that stockpiles are not accumulated in future to the detriment of future generations.

Rights of indigenous peoples, farming communities and consumers

It is fundamental to the progress of sustainable agriculture and food security that the rights of indigenous peoples and farming communities to seeds, land, water and other natural resources are guaranteed. To that end the CSD should call for:

a) Financial support for existing organic/ecological agricultural activities and for transitional activities away from chemical and monoculture-based production, including IPM programmes. The target for such support should be family farms and communities, especially those who are impoverished;

b) Phasing out of subsidies for unsustainable practices;

c) Action by national governments to complete the revision of the FAO International Undertaking on Plant Genetic Resources to legally protect farmers' rights to own, conserve and use traditional seeds. Strengthening the rights of farmers would empower them to make choices in favour of sustainable production;

d) The removal of obstacles to the protection of traditional and indigenous knowledge, including the provisions permitting the patenting of life forms contained in the Agreement on Trade-related Intellectual Property Rights, as part of the ongoing WTO review of those relevant provisions.

International cooperation

1. There is an urgent need to rebuild a commitment to North-South dialogue and cooperation that would eventually result in increased aid volume, better terms of trade for the South and a greater balance in global economic relations and structures that are supportive of organic/ecological agriculture. Governments should phase out subsidies in agricultural production, energy, transportation, advertising, export, etc., which support unsustainable food systems, and replicate publicly funded models which support the transition to low-input, ecological and organic farming. They should also give priority support to small scale family-owned farms, through appropriate policies including land reform and trade protection for national food markets when needed. A start can immediately be made to reform the content of aid and improve its quality in agriculture and rural development. A serious review of the past and future of various forms of aid (bilateral, multilateral, research, technical advice and projects) can be made a valuable exercise.

2. The FAO should complete its work on the evaluation of the potential contribution of organic agriculture to sustainability goals by 2000, and formulate and implement support programmes to that end by 2002 to enable a review at Rio+10.

Consumption patterns and consumer rights

1. Local consumption of the produce of sustainable agriculture should be encouraged, as this will reduce transport costs and energy waste, as well as increase the commitment of consumers to the farmers who produce their food as well as their local environment. In this regard, the CSD should call for support for urban organic/ecological agriculture so that increasing urban populations do not put more pressure on rural communities and land for the supply of food.

2. The CSD and individual governments should reaffirm and implement the right of consumers, individually and through various associations, to full information and informed choice in the

market place. The Consumer Protection Guidelines adopted in 1999 should be fully and urgently implemented.

Research and policy

1. The CSD has a vital role to play in supporting and recognising ongoing research on the real contributions of organic/ecological agriculture to, among others, food security, biodiversity conservation, soil protection/enhancement, water conservation and the socio-economic well-being of farming communities and consumers' interests. The CSD should function to galvanise the research findings in these areas into policies and implementing programmes at all levels.

2. Accordingly, mainstream research priorities should be reversed from their emphasis on industrial agriculture and genetic engineering and be directed to the diversity of organic/ecological options that already exist, and to enrich knowledge and understanding of more alternatives. Support for public interest research, at national, bilateral, regional and multilateral levels is crucial for this purpose. The true multiple values of small farms should be recognised and reinforced, and form the basis for policies on sustainable agriculture, food security and rural development.

Section 2: Ecological and Socio-Economic Foundations for Defining Best Practices for Sustainable Agriculture and Rural Development (SARD)

Issues and Concerns

Despite a slower global population growth rate, agricultural systems around the world still need to double food production in the next century in order to eliminate hunger. However, hunger will continue to persist if issues related to poverty, access to food and distribution are ignored. While most analysts agree that food production from existing farmland needs to be increased, opinions vary as to the best method for achieving this goal. Conventional wisdom asserts that doubling food supply requires more effort to intensify agriculture through emphasis on mechanization, pesticides, fertilizers and biotechnology. However, other analysts point out that the gap between demand and production is continually growing, and will not be bridged simply by developing new agricultural technologies. Most hungry consumers are too poor to buy the food they need, while poor producers cannot afford expensive capital intensive technologies developed by

external organizations seeking financial returns. Moreover, these technologies are often not suited to the conditions and needs of small farmers, traditional farming communities and indigenous peoples who have already been bypassed by agricultural intensification efforts. In addition, the sustainability of these technologies has been questioned.

The greatest challenge for humanity is to protect and sustainably manage the natural resource base, while feeding and housing a population that is still growing, and recognizing the land and resource rights of traditional farmers and indigenous peoples. "Intensive" models of agricultural production are also affecting the rights of women relating to access to, control and management of land.** It is, however, becoming clear that technologies and processes are available that are able to produce more food for poorer groups without causing damage to the natural environment. Indigenous Peoples, for instance, have developed over many generations a holistic traditional scientific knowledge of their lands, natural resources and environment, which has been explicitly acknowledged in Agenda 21, Chapter 26. Thus, the primary need is for solutions largely based on existing local resources and traditional skills and know-how and/or grassroots initiatives informed by NGOs, farmers' and indigenous peoples' expertise, while at the same time protecting the traditional knowledge of Indigenous Peoples. While a number of ecologically-based practices exist, they are not being promoted actively in most countries.

A key policy challenge is to formulate a strategy founded on the informed participation of relevant stakeholders at all levels of discussion, that enhances food security, provides paths out of poverty and conserves the natural resource base of agriculture. In the absence of such a people-centered agricultural research and development model, significant opportunities to raise agricultural productivity in economically viable, environmentally benign, and socially uplifting ways will be irrevocably lost.

Solutions exist - The question is how best to support their adoption?

How then can we encourage transitions in both traditional and intensive systems towards greater sustainability? Sustainable farming seeks to make the best use of nature's goods, by integrating

** See NGO background paper on the role of land tenure in sustainable agriculture and food security: "The Sustainable Management of Land Resources -- An Essential Building Block in National Food Security Planning." The Popular Coalition to Eradicate Hunger and Poverty, Italy.

natural processes such as nutrient cycling, nitrogen fixation, soil regeneration and natural enemies of pests into food production processes. It minimizes the use of non-renewable inputs (pesticides and fertilizers) that damage the environment or harm the health of farmers and consumers. And it makes better use of the knowledge and skills of farmers and indigenous peoples, so improving their self-reliance and capacities through participatory approaches to rural development.

Four Options for Change

1. Better use of available renewable resources (natural capital) - For a variety of reasons, water, soils and biodiversity have not been used most effectively in the past. The options include water harvesting; soil and water conservation - e.g. contour cropping, terraces, minimum tillage, grass strips; composting, livestock manure; irrigation scheduling and management; restoration of degraded or abandoned land; rotational grazing; habitat management for pest-predators; drainage systems and sub-soiling; raised beds or chinampas; bio-pesticides and bio-fungicides. Protection and conservation of non-invasive animal species is another priority.

2. Intensification of single sub-component of farm system - A different sort of improvement to farm or livelihood systems involves the intensification of a single sub-component of their farm, while leaving the rest alone, such as through double-dug beds, adding vegetables to rice bunds, or digging a fish pond. These technologies can significantly increase total food production for rural livelihoods, particularly of protein and vegetables. The beneficiaries are often children during "hungry" seasons.

3. Diversify by adding new productive natural capital and regenerative components - The third type of improvement to natural capital involves the diversification of the whole agroecosystem through addition of new regenerative components, such as legumes in cereal rotations, fish in rice, agroforestry and livestock. These technologies lead to a total farm re-design, which can result in synergistic interactions - where one component of the system positively contributes to the success of other components.

4. Better use of non-renewable inputs and technologies - Where external and non-renewable inputs are being used, the system can move towards more sustainable and effective production by ensuring precise applications of inputs with little or no wastage or damage to natural or human capital. With time this approach evolves towards an input substitution phase, where chemical inputs are replaced by organic or biological inputs, a strategy followed by most organic farmers. The ultimate goal however is to move beyond input substitution by breaking the monoculture with biodiversification approaches that allow the farm to sponsor its own nutrient cycling, pest control and productivity.

Agroecological/organic systems are not limited to producing low outputs, as some critics have asserted. Fifty to 100 percent increases in production are rather common with most alternative production methods. In some of these systems, yields for crops that the poor rely on most -- rice, beans, maize, potatoes, barley - are already being increased by 200 percent or more, relying on labor and management more than on expensive purchased inputs, and capitalizing on intensification and synergy.

Recommendations for Institutional and Stakeholder Actions

1. Integrated Partnerships: It is urgent that governments and international public organizations encourage and support effective partnerships with NGOs, local universities and farmers' and indigenous peoples' organizations in order to assist and empower poor farmers to achieve food security, income generation, and natural resource conservation. A major challenge for the future entails promoting institutional and policy changes to realize the potential of the alternative approaches. Needed changes include:

a. Increasing public investments in agroecological participatory methods.

b. Changes in policies to stop subsidies of conventional technologies and to provide support for agroecological approaches;

c. Improvement of infrastructure for poor and marginal areas;

d. Appropriate equitable market opportunities including market access and information, including fair trade schemes;

e. Security of tenure and progressive decentralization processes, which, at the same time, respect indigenous peoples' inherent rights to their ancestral territories;

f. Change in attitudes and philosophy among decision-makers, scientists, and others to acknowledge alternatives;

g. Strategies of institutions encouraging equitable institutional partnerships with local NGOs and farmers; replace top-down transfer of technology model with participatory technology development and farmer-centered research and extension. In this context, institutions: public and private, governmental and non-governmental, need to recognize and support the ability of small and marginal farmers to contribute significantly to future world food production if given appropriate cooperation and encouragement in the form of institutional change and investments.

2. Appropriate Policy Support for Scaling Up &Mechanisms for Ongoing Stakeholder Dialogue

Sustainable agriculture can contribute significantly to natural and social capital, as well as make an impact on rural people's food security, welfare and livelihoods. But without appropriate policy support at a range of levels, these improvements will remain at best localized in extent or, at worst, wither away.

With some important exceptions, many of the sustainable agriculture improvements seen in the 1990s throughout the world have arisen without significant national and institutional policy reform. To date very few countries have given explicit national support for sustainable agriculture by putting it at the centre of agricultural development policy and integrating policies accordingly. Significant change is required in the case of policies framed to deliver increased food production in order to incorporate environmental and social benefits too. In addition, food policies framed to help deliver cheap and abundant food regardless of quality will have to change, while rural development policies and institutions focusing on 'exogenous' solutions to the economic and social problems of rural communities need to be refocused toward community-based and participatory development. While much can be done with existing resources, the shift towards a more sustainable agriculture will not happen without some external help and money. Significant transaction costs will be incurred, such as the costs of learning new knowledge, the costs of developing new or adapting old technologies, the costs of learning to work together, the

costs of institutions having to break free from existing paradigms of thought and practice. It will also cost time and money to rebuild depleted natural and social capital. In addition, vested interests in maintaining the status quo could make such reforms difficult. For example, fertilizer companies do not have any incentive to support a transition to legume-based farming or biofertilizers due to the huge potential revenue loss. An ongoing mechanism for dialogue among stakeholders in sustainable agriculture will thus be essential to solving these problems.

3. Research: Promising research areas for evaluation and promotion of alternative technologies and policies include: green manure, cover crops, improved fallows, agroforestry, aquaculture, crop-livestock mixed systems, IPM, biological control, organic soil management and nutrient cycling, processes of technology adaptation and adoption, supportive policies, institutional partnerships and market development.

The international community and governments must continue or increase investments in agricultural research because it can take years or decades to develop new lines of research and put research findings into sustainable practice on the land. Developing countries, particularly those with high population densities, will need international cooperation to gain access to the results of such research and to technology aimed at improving agricultural productivity in limited spaces, as well as access to resources that will allow producers to conduct agricultural research that is responsive to their own needs. Ways to ensure that privately funded research is made more accountable to farmers, public concerns and the results made more available is needed.

Specific Action Proposals

1. Implement as noted in Agenda 21, 26.4(a) "ratification and application of existing international conventions relevant to indigenous peoples and their communities (where not yet done) and provide support for the adoption by the General Assembly of (the current) declaration on indigenous rights.
2. Recognize as in para 26.5 (ii), the need to protect Indigenous Peoples' traditional knowledge (CBD article 8 (j) and elsewhere), "(increase) the efficiency of indigenous peoples' resource management systems, for example, by promoting the adaptation and

dissemination of suitable technological innovations." Traditions, knowledge and practices, and the cultural heritage of indigenous peoples and other farming communities must be respected in all policies, laws and activities undertaken by governments as well as partnerships with NGOs.

3. Endorse a participatory approach for farmer research and training as a necessary basis for the desired transition towards sustainability.

Section 3: Knowledge for a Sustainable Food System: Identifying and Providing for Education, Training, Knowledge-Sharing and Information Needs, Issues and Concerns

"Knowledge for a Sustainable Food System" covers three main areas. The first is the transition to a sustainable food system, and the steps that governments and major actors at the CSD can take toward this in terms of policies, education and awareness. A second concern is the knowledge, education and training which farmers and farmworkers need, especially the small farmers who comprise the vast majority of family farms throughout the world. Within this area, the role of women farmers and of indigenous peoples is of particular importance. A third issue is the education and knowledge that consumers need about the food system, food choices and food skills. If we are to make the transition to a food system based on sustainable farms, vibrant rural communities, and safe, healthful food, we need a new awareness, training and education, flowing into changed policies and actions (USDA, Rosset).

Solutions and Recommendations for the Transition to a Sustainable Food System

1. Communicating the Message of Sustainable Agriculture - Governments, international agencies, and communities should develop education and information policies to communicate the scale, the productive potential, and the multiple social and environmental contributions of sustainable agriculture, with particular attention to small-scale farming and rural development. These communication policies should break through the misconception that sustainable and regenerative agriculture is a return to a low-technology, backward form of agriculture.

Sustainable agriculture incorporates innovations from scientists and farmers, uses high technology and ancient wisdom, and can be used by all types of farmers and on every kind of farm (Pretty).

Small-farm agriculture remains the predominant form of agriculture in the world, numerically dominant in the United States, and central to the production of staple foods in developing countries. Further, small farms have multiple functions which large farms lack. They embody diversity - biodiversity, diversity of ownership, of cropping systems, landscapes, culture and traditions. Special reference should be made to indigenous peoples as creators and conservers of agro-biodiversity, and holders of knowledge, practices and innovation systems that sustain food security in large areas of the planet.

Decentralized land-ownership encourages economic opportunity in rural areas. Small farms create a personal connection to food through rural-urban exchanges and farmers' markets. They are vital to the economy, both in developed and developing countries. The essential role of women in food production and rural well-being, especially in the South, must be supported in agricultural policy and communicated in education and training (USDA, Rosset).

Farming systems are extremely diverse throughout the world, and the transition to sustainable agriculture can be communicated in terms of a series of "steps toward sustainability" (Pretty). These steps from conventional modern farming move through improved economic and environmental efficiency (Step 1), integrating regenerative technologies (Step 2), and redesign with communities (Step 3), which involves farmers and rural communities themselves in creating sustainable practices.

This vision of a sustainable food system for farmers, farmworkers, traders and consumers can only be achieved through a participatory approach. Sustainable agriculture is not a fixed set of practices or policies but a process of social learning and participatory research, starting with the assets already within communities, and supplying targets and indicators to measure progress. (Pretty).

2. Farmers' and Farmworkers' Knowledge, Training and Education - Too often, the training of farmers and farmworkers is based on a top-down diffusion of information from scientists to

"uneducated" farmers and farmworkers, based on the assumed superiority of a scientific, technical, industrial model of agriculture. This approach does not recognize many important facts which are essential for effective farming policies:

(a) That no technology is appropriate for all types of farmers; each farmer has unique constraints, limits and assets. Resource-poor farmers must use low input and "appropriate" technologies to survive.

(b) Farmers live in highly variable and diverse environments - soils, water regime, biological fertility, etc. They have accumulated a wealth of site-specific knowledge and experience which the researcher does not have, especially on local biodiversity and its possible uses.

(c) Many farmers face urgent problems of being unable to reduce or eliminate their dependence on pesticides without information and training which will help them adopt sustainable alternatives.

(d) Moreover, farmworkers have the right to a living wage and safe working conditions, to belong to a trade union and to elect health and safety representatives, to protection against exposure to hazardous pesticides, and they have the right of refusal to work with pesticides which damage human health and the environment.

(e) Traditional knowledge and technologies that have evolved from millennia of experimentation and practices are often the most appropriate tools to achieve sustainable practices in agriculture.

(f) The role of women in the transmission of knowledge and in sustainable food production must be recognized and strongly supported. The majority of farmers in the South are women. Providing equal gender opportunities for education, training and information on food production and nutrition is key to achieving sustainable agriculture.

Solutions and Recommendations

Farmer-centered research and extension has no single organisational form, but its philosophy and objective are common across many programs. Farmers are no longer to be considered as the recipients or adopters of technology. Rather they are central to its generation, application and monitoring. Instead of the "linear" model of research and extension, where scientists develop new technology that is transmitted through extension workers to farmers, experience and observations support the "triangular" model. This envisions scientists, extensionists and farmers

interacting with one another directly in a three-cornered relationship. Governments and agricultural agencies can improve the knowledge, training and education of farmers and farmworkers through the following policy initiatives to develop sustainable agriculture and rural development.

(a) *Improve Rural Education* - Increase investments in rural education, and develop rural education programs, which integrate farmers' training and practices in their curriculum e.g."rural family schools".

(b) *Improve Farmers' and Farmworkers' Training* - Recognize the central role of small farmers in research and development. Support the training programs of farmers' own organizations. Reform the training of agricultural and communications professionals to serve small farmers and the rural poor through an integrated approach of rural development, including an agro-ecological approach of farming systems and landscapes. Where appropriate, develop decentralized information networks and databases on agricultural innovations and locally based success stories via CD ROMs and the Internet. In some cases, governments have begun working in new, less directive and more collaborative relationships with farmers. These new approaches are thus, based on active farmer involvement -- indeed, often farmer leadership -- in a process of identifying problems and needs to start and guide the process; of determining and choosing among possible solutions; of testing, monitoring and evaluating the results of new practices; and of helping to disseminate those results that are considered beneficial. This process can be characterized as participatory technology development, as farmer-centered research and extension, or as farmer-to-farmer agricultural improvement. An enabling environment at local, national and international levels is essential to support existing processes and promote the development of new ones, which adopt this approach.

(c) *Facilitate the participation of small farmers in national policy debates* - Give farmers' organizations access to modern communication techniques and material, and help them develop their communication strategies. Promote national debates and conferences on the role of family farming for the future of the nation, and highlight farmers' successful

initiatives in terms of economic organization, education, and management of natural resources. Support the conservation, protection and development of traditional knowledge and innovation systems, and integrate these into national educational systems and agricultural projects. People's participation at the local, national and level, particularly women's, is necessary for improved food production, better access to food, and nutritional well-being.

3. Education and Knowledge of Consumers and Other Stakeholders - In addition to what has been said about governments and farmers, a sustainable food system cannot be built without the education and knowledge of consumers and other participants in the food system, such as retailers, distributors, and banks. This knowledge extends to the food system, food choices, and food skills.

A crucial problem, at least in the developed world, is that many people are increasingly separated from their food system. Faced with a food system of apparent abundance, with supermarkets providing a seemingly endless supply of food, people have lost touch with such basic questions as: who is growing our food and how is that food being grown? Who controls the land and the food system itself? Who gets to eat and who is going hungry? How healthful and safe and nourishing is our food? Why are family farms being lost and rural economies in decline, not only in the developing world, but also in the developed world? A connected problem is the loss of traditional knowledge of small-scale agriculture and traditional skills of using local food.

Family farms and other sustainable agriculture institutions need markets for their products, and markets reflect the choices of distributors, retailers, lending institutions, and consumers. Educational programs are needed to make these choices informed by knowledge of sustainable food systems: information on the hidden environmental and social costs of chemical agriculture and GMOs in terms of loss of top soil, pollution of groundwater, the inhumane treatment of animals in factory farms, and threats to human health. Education for a sustainable food system would build on many successful programs such as community gardens for disenfranchised youth in the United States, ecological youth networking in Latin America, ecological footprint

initiatives in Europe, farmers' markets and community-supported agriculture, policy initiatives by governments to subsidize the transition to organic and low-input farming. Programs to recover skills of food preparation and cooking, and nutrition education in schools and communities are also urgently needed.

Section 4: Globalization, Trade Liberalization and Investment Patterns

Context

An agricultural policy review "particularly with regard to food security, and sustainable development" is mandated in Chapter 14a) of Agenda 21. In 1997, the General Assembly recognized the provision of sustainable food security (and adequate housing) as [t]he greatest challenge to humanity. The present context of the Chapter 14 review in the CSD dialogues is to determine which trade liberalization and globalization policies might promote sustainable agriculture, rural development and food security.

Issues

The following paper presents four issues pertinent to the nexus of food security, sustainable agriculture and agricultural trade liberalization: a) how to reduce the trading of agriculture commodities at prices below their cost of production, i.e. "dumping"; b) how to analyze the impact of agriculture market concentration on sustainable development and food security; c) how to develop sustainable agriculture indicators to assess the economic and environmental impact of globalized agricultural trade and investment; and d) whether a Convention on Sustainable Food Security would be a viable instrument to create coherence and focus for sustainable food security policy at the multilateral level. While Major Groups and CSD delegates may not agree on policies to address these issues, we hope that they will agree that each issue merits debate and the deliberation at the CSD.

Proposed Institutional Actions

First, the CSD should request the Food and Agriculture Organization (FAO) to use existing research and develop new methodology to determine national cost-of-production and export price statistics for major agricultural commodities. This request should target in particular agricultural commodities defined as crucial to national and household food security. The CSD

should request technical expertise to develop uniform accounting procedures to calculate export price and cost-of-production figures, including externalized environmental costs. Where resources were lacking for a national report and/or where market structures for crucial commodities were similar within a region, FAO could provide a reporting methodology and technical assistance that enabled smaller nations to work together to issue a regional report. These reports would be the basis for World Trade Organization (WTO) negotiations to phase-out of the dumping of agricultural commodities at prices below the cost-of-production.

The harmful effects of such dumping, currently permitted under WTO rules, have been well documented by NGOs. Developing country farmers, unable to compete with dumped imports, are driven off the land into already overcrowded cities, resulting, in the words of an Argentine diplomat, in "more rural poverty, more environmental degradation, lower industrial salaries and more social unrest. The WTO discussion toward reducing agricultural dumping has been mired in endless debate over what constitutes a "trade-distorting" subsidy. The negotiation of anti-dumping disciplines through a simple comparison of export prices and cost-of-production figures would provide a way to break this deadlock and to move towards resolution of this problem, which distorts trade, and damages the environment and food security. Even if WTO members failed to negotiate a phase-out of dumping, cost-of-production figures could be used by governments to assist national agricultural and food security planning. Major Groups could use such figures, for example, to draft national agricultural legislation proposals and to build technical capacity for environmentally sustainable food security.

Second, the CSD should request the United Nations Conference on Trade and Development (UNCTAD) to assist governments and Major Groups to report on the concentration of market power in national and regional markets for agricultural commodities and sources of agricultural inputs. UNCTAD has an on-going mandate to work on restrictive business practices and the structure of commodity markets that would provide invaluable background for this work. These reports could include analytical summaries of major mergers and acquisitions; case studies of market concentration impacts for producers, food industry workers, and consumers; reports on national legislation and enforcement of laws concerning anti-competitive business practices; government assistance offered to and received from major agribusiness companies; and the impact of market concentration on food security, rural development and the environment.

Governments and Major Groups could use the reports for a variety of purposes, including for analysis of agribusiness trade and investment proposals; for preparation of trade and environment policy proposals; and, for dialogue with and proposals to multilateral lending institutions. The concentration of agricultural commodities and inputs market share, particularly by transnational agribusiness companies, has been a principal mechanism for the creation of global agricultural markets. Some commentators even argue that a high degree of concentration in agricultural production and trade is more "eco-efficient" than in markets structured by less concentration. Annual national or regional reports on market concentration in agricultural commodities would test such contentions, and offer evidence to justify the restoration of competition to markets where its suppression has had a negative effect on sustainable agriculture and food security.

Third, CSD 8 should seek funding and the technical assistance of relevant UN agencies to hold a multi-stakeholder meeting to develop sustainable agriculture indicators. Such indicators could be used to measure the impact of agricultural trade liberalization on sustainable agriculture. For example, they would be tools for the implementation of the environmental review of WTO Agreement on Agriculture (AoA), called for by CSD 3. Such a review could be carried out on a case study basis similar to the studies produced for the FAO Symposium on "Agriculture, Trade and Food Security" (held 23-24 September 1999 in Geneva). In addition, in the context of CSD 9's focus on transportation, the CSD could commission studies of the impact of current agricultural commodities transportation on climate change. These reports could be used as part of the WTO's national-level Trade Policy Reviews. A CSD facilitated synthesis of ongoing research in sustainable agriculture indicators could also inform the direction of agro-environmental work in the UN system and among member states. In cases where smaller nations could not finance participation in a process to establish and apply such indicators, member states should commit resources to permit their participation and use of the indicators.

Fourth, the CSD members should consider calling on the General Assembly (GA) to authorize a special Intersessional to consider proposals for a Global Convention on Sustainable Food Security. The special Intersessional report and accompanying studies from governments and Major Groups could be used by the GA to help determine whether there was sufficient interest and capacity for the GA to authorize the creation of an International Negotiating Group (ING) to prepare Convention negotiations. At the World Food Summit in 1996, more than 1,200 non-

governmental organizations supported the development of a "Code of Conduct on the Right to Food" and a "Sustainable Food Security Convention. (It should be noted that many NGOs do not believe that a Food Security Convention process is a viable means of improving food security.) The elaboration of the Code is now underway at FAO and the UN High Commission on Human Rights. Without a multilateral negotiating forum proposals for a Convention cannot be refined by governments and other stakeholders into legal instruments to realize Chapter 14 objectives. CSD members should consider using the mandate of Agenda 21's Chapter 39, "International Legal Instruments and Mechanisms," to propose that the General Assembly authorize the creation of an ING to prepare negotiations for a Convention.

In considering the elaboration of a Sustainable Food Security Convention, CSD delegates and Major Groups should acknowledge the evidence that agricultural trade liberalization has had negative impacts on food security, particularly in developing countries. An alternative forum to negotiate multilateral solutions to food security, one that could help set some parameters for multilateral trade negotiations on agriculture, is needed. These proposed Institutional Actions should receive the support of and expertise of grassroots-level organizations, particularly in developing countries.

To that end, the CSD should request United Nations agencies, Major Groups and governments involved in implementing these Actions to design grassroots effective, participatory research and consultation processes. Such processes could be used, e.g. to determine cost of production figures and dumping impacts; to develop sustainable agriculture indicators; and to solicit proposals for a possible Food Security Convention. The CSD should request that agencies, Major Groups and governments seek dedicated funding to enable grassroots level organizations to participate in the aforementioned processes.

Possible Partnerships

Major Groups that have historically been active in public education and/or technical capacity-building for food security and sustainable agriculture should initiate dialogue with organizations that may not yet have recognized their vested interest in improving food security and sustainable agriculture. Examples of such organizations would include agricultural and rural bankers associations whose clients are going out of business due in part to present policy regimes, and

insurance companies whose financial viability depends on reducing the impact of catastrophes caused by ongoing environmental deterioration, rural-to-urban migration and other factors. Agricultural cooperatives, member organizations and businesses, particularly those that have been harmed by below cost-of-production prices for commodities, by wholesale or retail market concentration, or by the externalization of environmental costs, may also be willing to discuss and perhaps support some of the institutional actions outlined above. In designing and executing the proposed Institutional Actions, Major Groups, UN agencies and governments should interface academic and grassroots expertise. For a successful CSD 8, it is vital that there not be separate channels of communication to governments that facilitate a polarization between private sector and public interest Major Groups. We hope that there will be a full and honest debate on the proposals made here, so that progress in the full implementation of Chapter 14 can be made.

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